Draft Proposed Scope of Work

Maintenance Dredging at the Levin-Richmond Terminal Corporation Berth B Located Within the Lauritzen Channel at the United Heckathorn Superfund Site in Richmond, California

Submitted to

U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Prepared on behalf of

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PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

977579.2

November 8, 2012

John Lyons
Regional Counsel
Office of Regional Counsel, ORC-3
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Levin Dredging Proposal

Dear John:

As a follow up to the meeting between Levin and EPA held on September 19, 2012, enclosed are three copies of the Draft Scope of Work for Maintenance Dredging at Levin Richmond Terminal Berth B.

Levin understands that EPA will be a significant commenter on any maintenance dredging application submitted by Levin and has therefore sent the Draft to EPA for review and comment before filing the required applications with the appropriate agencies.

Please share the enclosure with others at EPA involved in this matter. Levin looks forward to hearing from EPA regarding the enclosure.

Very truly yours,

Keith Howard

KH/bh
Enclosures
cc: Gary Levin (w/enclosure)

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1. INTRODUCTION

Levin-Richmond Terminal Corporation (LRTC) has contracted Pacific EcoRisk to assist in the preparation of a proposed scope-of-work (SOW) to perform maintenance dredging at the LRTC Berth B. The goal of the SOW is to determine the feasibility of maintenance dredging within an active superfund site, subsequent dredged material re-handling, and transportation of contaminated marine sediments to an appropriate disposal site. Performance of the maintenance dredging has a number of potential benefits such as:

- Berth B will be restored to a more usable condition enabling LRTC to continue its use;
- Contaminated sediments will be removed from the Lauritzen Channel reducing the overall mass of DDT and dieldrin at the site;
- LRTC will be paying for the cost of dredging, potentially decreasing the overall cost of any future remediation activities performed by the United States Environmental Protection Agency (USEPA); and
- Any monitoring performed by LRTC in support of the dredging would be provided to the EPA.

Following acceptance of the maintenance dredging proposed SOW by the USEPA, a detailed Sampling and Analysis Plan will be prepared and submitted to USEPA and other groups (i.e. Dredged Materials Management Office [DMMO]), as required, for the performance of ongoing maintenance dredging at LRTC's Berth B. Upon completion of the sampling and testing program, a workplan for the implementation of subsequent dredging, dredged material re-handling, and transportation of contaminated marine sediments to an appropriate disposal site will be prepared and submitted to the USEPA for approval.

1.1 Site Overview

LRTC, located in Richmond (CA) in the Santa Fe Channel (Figures 1-1 through 1-3), owns and operates a maritime shipping terminal facility that primarily ships and receives scrap metal, iron ore, and petroleum coke for national and international distribution.

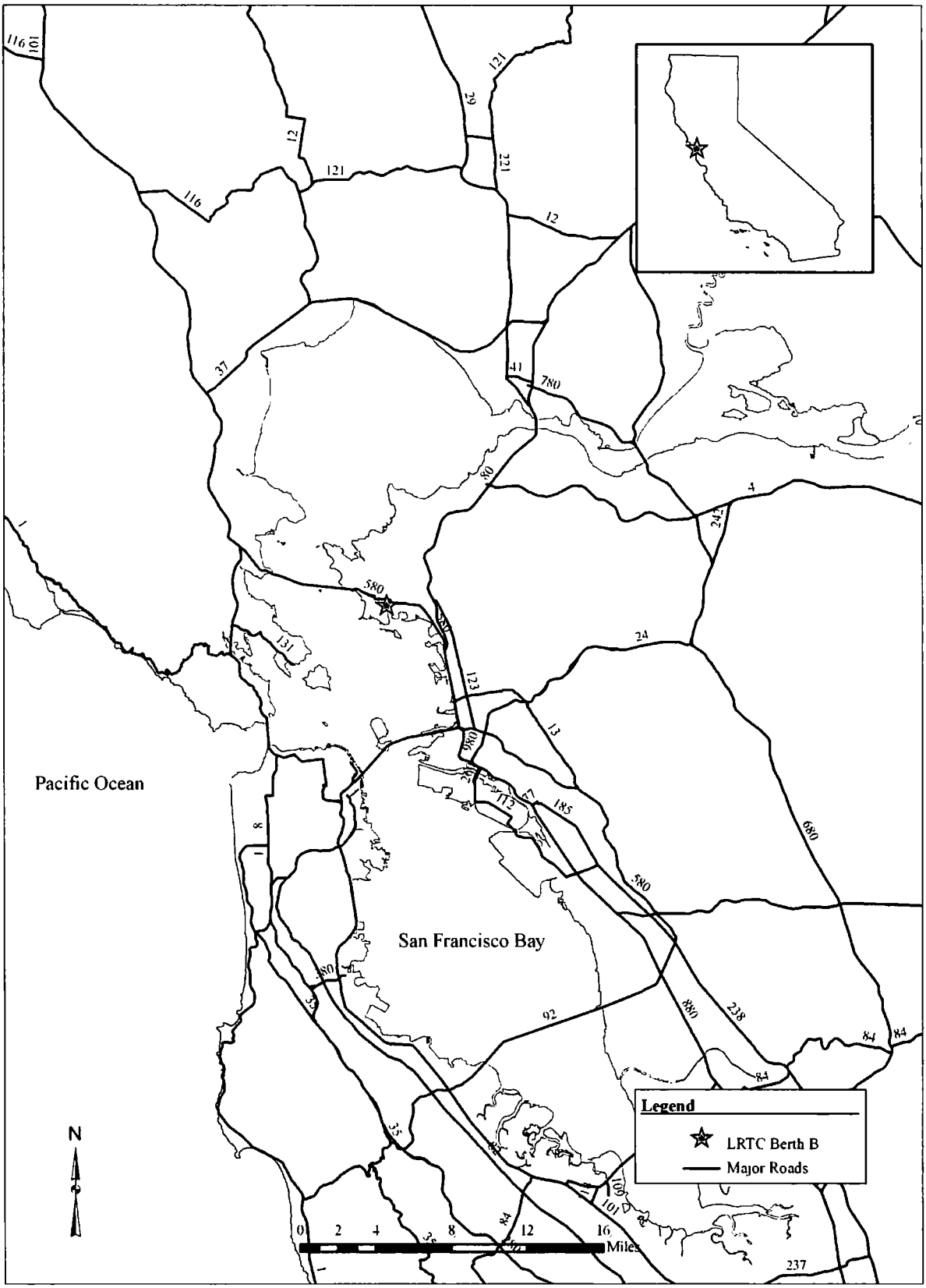

Figure 1-1. Site Location Map

Figure 1-2. Vicinity Map of Richmond Harbor

Figure 1-3. Vicinity Map: Levin-Richmond Terminal Corporation Berth B

To support its operations, LRTC operates out of two berths commonly identified as Berth A and Berth B. Berth A is located within the Santa Fe Channel and is routinely dredged via dredging permits obtained through the Dredged Material Management Office (DMMO). However, Berth B is located within the Lauritzen Channel adjacent to the United Heckathorn Superfund Site and has not been dredged since in-water remediation activities took place in 1996-1997 under the guidance of the USEPA.

During the interim period since 1997, sediments have accumulated within LRTC Berth B to the point that maritime operations at the facility are severely impacted. To accommodate safe vessel transit and berthing, LRTC requires dredging of its Berth B area to a minimum depth of –33.0 ft Mean Lower Low Water (MLLW) + 1.0 ft over-dredge. The proposed maintenance dredging depth and estimated volume of dredged material, including over-depth, is summarized in Table 1-1.

Table 1-1. Proposed Maintenance Dredging for the Levin-Richmond Terminal Corporation Berth B.

Area	Proposed Depth (ft MLLW)	Estimated Volume (yds^3)	Over-depth (ft)	Estimated Volume (yds^3)	Total Depth (ft MLLW)	Total Estimated Volume (yds^3)
Berth B	-33.0	2,000	+1	700	-34	2,700

1.2 Previous Site Remediation Activities

Dredging of the Lauritzen Channel occurred from August 1996 to March 1997 under the guidance of the EPA with approximately 105,000 cubic yards (yds^3) of DDT- and dieldrin-contaminated sediment being dredged from the Lauritzen Channel. Prior to remediation, the mean total DDT concentration was 47,000 μg/kg at the head of Lauritzen Channel; after remediation, the mean DDT concentration was 263 μg/kg. USEPA post-remediation studies have indicated that unacceptably high concentrations of DDT and dieldrin remain in the Lauritzen Channel with future remediation activities planned.

The USEPA has performed five-year studies to assist in developing a remedial methodology for the contaminated sediment located in the Lauritzen Channel. Performance of the proposed maintenance dredging would facilitate the assessment of dredging as a potential future remediation strategy as EPA would be able to monitor all activities from dredging, to re-handling and subsequent transport to the disposal facility.

1.3 Scope of Work

This proposed SOW has been developed to describe the proposed maintenance dredging within an active superfund site and outlines a program to perform dredging and disposal of contaminated marine sediments at LRTC Berth B and to restore Berth B to a more usable condition. The SOW will consist of the following components:

- Sampling and testing program;
- Dredging activities;
- Sediment dewatering activities:
    - Stage 1 dewatering in barge followed by direct placement in dewatering cell,
    - Stage 2 dewatering in re-handling area dewatering cell;
- Rail car loading; and
- Transportation and disposal.

This SOW describes the general procedures for the performance of sampling, testing, dredging, dewatering, transportation, and disposal of contaminated marine sediments from the LRTC Berth B. For example, the sampling and testing approach is described in Section 2.1; however, it is not intended to be exhaustive, but rather a conceptual overview of how the sampling and testing program could be implemented; it is expected that the final work plan components will reflect discussions between USEPA and LRTC. Similarly, a brief framework for the performance of dredging, dewatering and transport to the disposal site are provided as a framework from which to start. The results of the sampling and testing program will be used to develop appropriate dredging, dewatering, and transportation plans.

Following acceptance of the proposed SOW by the USEPA, a consensus-based detailed SAP will be prepared and submitted to the EPA and other groups (i.e. DMMO), as necessary. The SAP will describe in detail the sampling and analysis program to be implemented to determine the appropriateness of proposed dredging, dewatering and transportation methods.

2. SCOPE OF WORK DESCRIPTION

This proposed SOW has been developed to describe the proposed maintenance dredging within an active superfund site and outlines a program to perform dredging and disposal of contaminated marine sediments from the LRTC Berth B and to restore Berth B to a more usable condition. The SOW will consist of the following components

- Sampling and analysis plan;
- Dredging activities;
- Sediment dewatering activities:
    - Primary dewatering in barge followed by direct placement in LRTC constructed dewatering cell,
    - Secondary dewatering in re-handling area dewatering cell;
- Railcar loading; and
- Transportation and disposal.

A brief overview of each SOW component is presented below in sections 2.1-2.5. LRTC understands that the results of the sampling and analysis will drive the type and level of any mitigation measures that would be implemented during subsequent dredging activities and will provide valuable information that will be used to assess appropriate dredging, dewatering, transportation and disposal methods.

2.1 Overview of Berth B Sampling and Analysis Plan

The goal of the analytical program will be to characterize the sediment quality to the proposed dredge depth. The SAP will include a detailed description of sampling and analysis methodologies; a brief discussion of a proposed sampling and analytical program is presented below.

2.1.1 Proposed Sampling and Analytical Chemistry Program

Using an appropriate coring device, two sediment cores will be collected to project depth plus over-depth (-34 ft MLLW) at each of 8 locations at LRTC Berth B (Figure 2-1 and Tables 2-1 and 2-2). At each of the 8 core locations, the contents of the entire first sediment core will be placed into a food-grade poly-bag for analysis of dieldren and total DDT; the remaining sediment will be used to prepare a proportional composite of the 8 sediments cores that will be analyzed for the full suite of analytical chemistry listed in Table 2-3. An additional "Z-layer", consisting of the top 6 inches of the post-dredged mudline, will be collected from each core and composited into a separate food-grade poly-bag for analysis of total DDT and dieldrin. The second sediment core at each location will be cut into 1-ft sections with each section being placed into a separate food-grade poly-bag and archived for analysis, if needed. It is estimated that there will be approximately 52 sediment sections in total (Table 2-2).

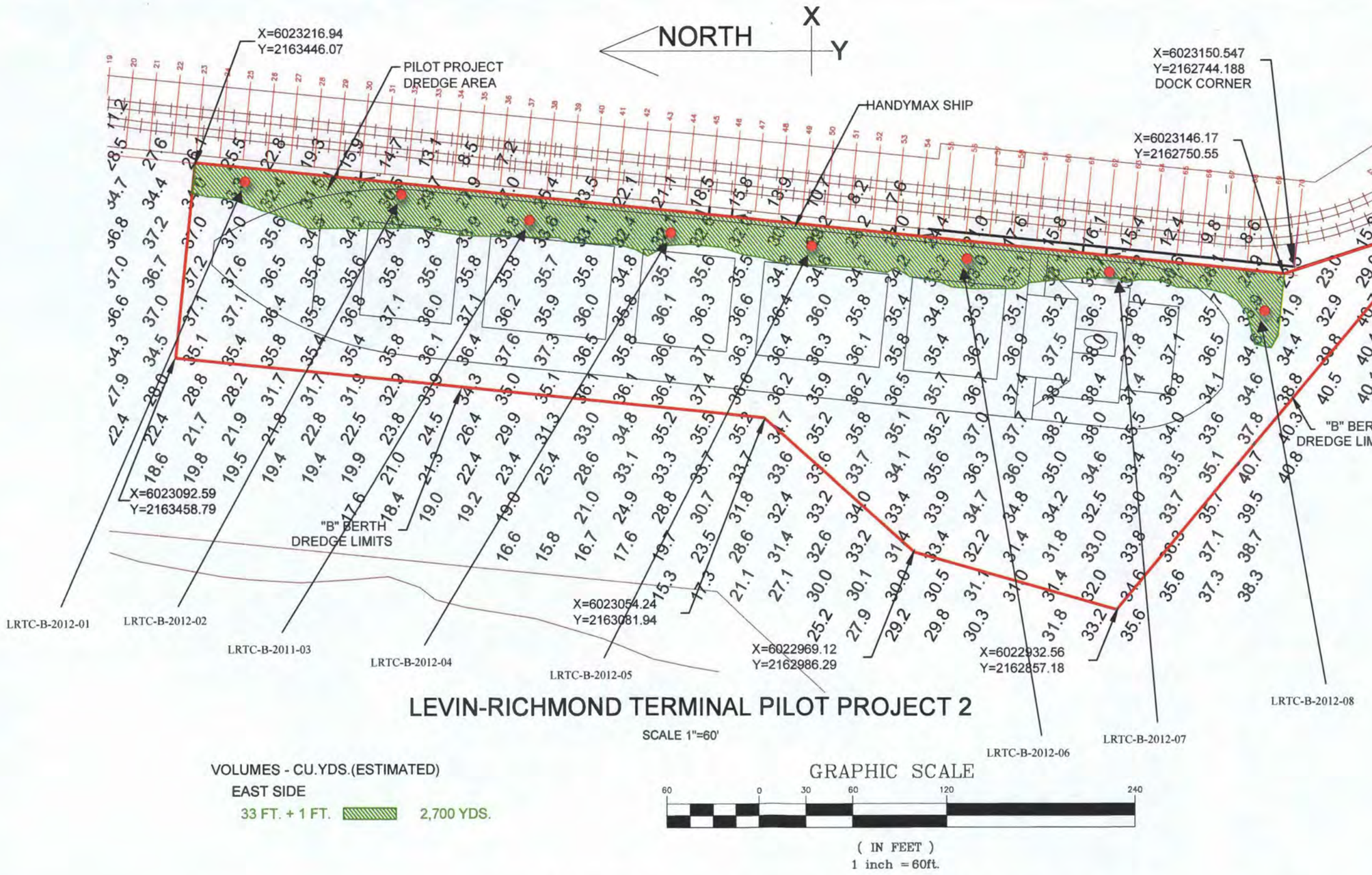

Figure 2-1. Levin-Richmond Terminal Berth "B" Sample Locations

Table 2-1. Locations of Sampling Stations and Estimated Core Depth.

Area	SAMPLE ID	Latitude (decimal-deg)	Longitude (decimal-deg)	Mudline Elevation (ft MLLW)	Proposed Project Depth + Over-Depth (ft MLLW)	Z-Layer (ft)	Total Depth Cored (ft MLLW)	Estimated Total Core Length (ft)
LRTC Berth B	LRTC-B-2012-01	TBD	TBD	-30.8	-34.0	0.5	-34.5	3.7
	LRTC-B-2012-02	TBD	TBD	-30.4	-34.0	0.5	-34.5	4.1
	LRTC-B-2012-03	TBD	TBD	-29.8	-34.0	0.5	-34.5	4.7
	LRTC-B-2012-04	TBD	TBD	-29.3	-34.0	0.5	-34.5	5.2
	LRTC-B-2012-05	TBD	TBD	-27.4	-34.0	0.5	-34.5	7.1
	LRTC-B-2012-06	TBD	TBD	-28.7	-34.0	0.5	-34.5	5.8
	LRTC-B-2012-07	TBD	TBD	-28.7	-34.0	0.5	-34.5	5.8
	LRTC-B-2012-08	TBD	TBD	-27.8	-34.0	0.5	-34.5	6.7

TBD – to be determined.

Table 2-2. Sampling Stations, Sediment Core Section to be Collected, and Estimated # of Samples.

Area	Core Section (Depth MLLW [ft])	LRTC-B-2012-01	LRTC-B-2012-02	LRTC-B-2012-03	LRTC-B-2012-04	LRTC-B-2012-05	LRTC-B-2012-06	LRTC-B-2012-07	LRTC-B-2012-08
LRTC Berth B	-27.0 to -28.0					x			x
	-28.0 to -29.0					x	x	x	x
	-29.0 to -30.0			x	x	x	x	x	x
	-30.0 to -31.0	x	x	x	x	x	x	x	x
	-31.0 to -32.0	x	x	x	x	x	x	x	x
	-32.0 to -33.0	x	x	x	x	x	x	x	x
	-33.0 to -34.0	x	x	x	x	x	x	x	x
	Z-Layer (-34.0 to -34.5)	x	x	x	x	x	x	x	x
Total Samples		5	5	6	6	8	7	7	8

x – sediment core section will be collected.

Table 2-3. Analytical Chemistry Testing Program: Sediment Standard List of Analytes, Methods and Targeted Reporting Limits.

Analytes	Method Used	SAP Targeted MRL
Metals		
Arsenic	EPA 6020	2 mg/kg
Cadmium	EPA 6020	0.3 mg/kg
Chromium	EPA 6020	5 mg/kg
Copper	EPA 6020	5 mg/kg
Lead	EPA 6020	5 mg/kg
Mercury	EPA 7471A	0.02 mg/kg
Nickel	EPA 6020	5 mg/kg
Selenium	EPA 7742	0.1 mg/kg
Silver	EPA 6020	0.2 mg/kg
Zinc	EPA 6020	1 mg/kg
Pesticides		
Aldrin	EPA 8081B	2 µg/kg
a-BHC	EPA 8081B	2 µg/kg
b-BHC	EPA 8081B	2 µg/kg
g-BHC (Lindane)	EPA 8081B	2 µg/kg
d-BHC	EPA 8081B	2 µg/kg
Chlordane	EPA 8081B	20 µg/kg
2,4'-DDD	EPA 8081B	2 µg/kg
2,4'-DDE	EPA 8081B	2 µg/kg
2,4'-DDT	EPA 8081B	2 µg/kg
4,4'-DDD	EPA 8081B	2 µg/kg
4,4'-DDE	EPA 8081B	2 µg/kg
4,4'-DDT	EPA 8081B	2 µg/kg
Total DDT	EPA 8081B	2 µg/kg
Dieldrin	EPA 8081B	2 µg/kg
Endosulfan I	EPA 8081B	2 µg/kg
Endosulfan II	EPA 8081B	2 µg/kg
Endosulfan sulfate	EPA 8081B	2 µg/kg
Endrin	EPA 8081B	2 µg/kg
Endrin aldehyde	EPA 8081B	2 µg/kg
Heptachlor	EPA 8081B	2 µg/kg
Heptachlor epoxide	EPA 8081B	2 µg/kg
Toxaphene	EPA 8081B	20 µg/kg
Butyltins		
Mono-butyltin	Krone 1989	10 µg/kg
Di-butyltin	Krone 1989	10 µg/kg
Tri-butyltin	Krone 1989	10 µg/kg
Tetra-butyltin	Krone 1989	10 µg/kg
PAHs (RMP 25)		
Acenaphthene	EPA 8270C	20 µg/kg
Acenaphthylene	EPA 8270C	20 µg/kg
Anthracene	EPA 8270C	20 µg/kg
Benz(a)anthracene	EPA 8270C	20 µg/kg
Benzo(a)pyrene	EPA 8270C	20 µg/kg
Benzo(e)pyrene	EPA 8270C	20 µg/kg
Benzo(b)fluoranthene	EPA 8270C	20 µg/kg
Benzo(g,h,i)perylene	EPA 8270C	20 µg/kg
Benzo(k)fluoranthene	EPA 8270C	20 µg/kg

Table 2-3 *(continued)*. Analytical Chemistry Testing Program: Sediment Standard List of Analytes, Methods and Targeted Reporting Limits.

Analyte	Method Used	Targeted MRL
Biphenyl	EPA 8270C	20 µg/kg
Chrysene	EPA 8270C	20 µg/kg
Dibenz(a,h)anthracene	EPA 8270C	20 µg/kg
Dibenzothiophene	EPA 8270C	20 µg/kg
Dimethylnaphthalene, 2,6-	EPA 8270C	20 µg/kg
Fluoranthene	EPA 8270C	20 µg/kg
Fluorene	EPA 8270C	20 µg/kg
Indeno(1,2,3-cd)pyrene	EPA 8270C	20 µg/kg
Methylnaphthalene, 1-	EPA 8270C	20 µg/kg
Methylnaphthalene, 2-	EPA 8270C	20 µg/kg
Methylphenanthrene, 1-	EPA 8270C	20 µg/kg
Naphthalene	EPA 8270C	20 µg/kg
Perylene	EPA 8270C	20 µg/kg
Phenanthrene	EPA 8270C	20 µg/kg
Pyrene	EPA 8270C	20 µg/kg
Trimethylnaphthalene, 2,3,5-	EPA 8270C	20 µg/kg
PCB Congeners	EPA 1668	0.1µg/kg
Grain Size	ASTM 1992	±0.1%
Total Solids	EPA 160.3	±0.1%
Total Organic Carbon (TOC)	NOAA	±0.1%

NOTES: µg/kg – microgram/kilogram;
mg/kg – milligram/kilogram;
PAHs - polycyclic aromatic hydrocarbons;
PCBs - polychlorinated biphenyls.
SAP - Sampling& Analysis Plan
MRL - Minimum Reporting Level

2.2 Description of Berth B Dredging Activities

All dredging activities will be performed landside by LRTC or waterside using a designated dredging contractor.

Prior to the performance of any dredging activities, any necessary mitigation measures, such as use of a silt curtain, will be deployed to prevent migration of sediment outside of the berth dredge limits. Should a silt curtain be used, the curtain will be monitored and maintained by the dredging crew during the dredging activities to prevent migration of sediments outside of the LRTC Berth B. The silt curtain would be checked periodically to assure that no tears or breaches have developed. Any tears or holes discovered in the silt curtain will immediately be repaired before any further work is undertaken.

Sediments above -34 ft MLLW within LRTC Berth B will be dredged utilizing a patented cable-arm or similar environmental bucket to provide a level "cut" and to minimize turbidity. All dredging activities will be performed in accordance with an approved dredging operations plan (DOP) and placed into scows.

During loading activities, the dredge operator will attempt to maximize the amount of sediment in each bucket so as to minimize water. Dredging will be conducted such that each bucket is raised, free water will be allowed to drain back into the Lauritzen Channel. So long as all work is performed inside of the silt curtain, and acceptable turbidity levels are maintained, there will be no restrictions on the drainage of water from the dredge bucket back into the Channel within the silt curtain.

2.3 Proposed Dredged Material Dewatering

Sediment dewatering procedures will be performed by direct placement of sediment into a dewatering cell after which the sediments will be dried to technical specifications required for transport and disposal at the ECDC landfill in East Carbon, Utah. Re-handling of sediments placed directly into the dewatering cell will be performed in two stages summarized below in Sections 2.3.1 and 2.3.2. Initially, sediments will be allowed to settle within the scow and overlying water pumped onsite and disposed of according to LRTC's stormwater permit requirements. After the overlying water has been removed, sediments will be dewatered via mechanical re-handling within a dewatering cell.

2.3.1 Stage 1: Sediment Settling and Decanting of Overlying Water

Loaded scows will be pulled by a towboat to the LRTC Berth B dock and the contained sediments allowed to settle after which the overlying water will be pumped to large above-ground Baker tanks onsite for storage and subsequent testing prior to being discharged into the City of Richmond sanitary sewer system. Overlying water that does not meet permit discharge requirements will be treated to remove contaminants of concern (COCs) via polymer treatment. The water will be re-tested and filtered prior to disposal into the sanitary sewer system; polymer material containing the COCs will be placed into the dewatering cell and re-handled with dredged sediments.

2.3.2 Stage 2: Removal from Scow and Placement into Dewatering Cell

After the overlying water has been removed, a crane will be utilized to move the dredge material from the scow into a paved dewatering cell for further processing (Figure 2-2). The dewatering will be performed on-site in a LRTC constructed dewatering cell. During the dewatering process, sediments may be mixed with an absorbent or drying agent to facilitate moisture removal. The drying agent (e.g., quick lime or fly ash, etc.) will be mixed with the sediments in such a way as to optimize the drying process while at the same time minimizing any fugitive emissions of dust. The mixing process may be performed by loaders, a pug mill, an auger system, a combination of these devices, or some other mixing technology that is deemed appropriate for the activity. Upon reaching dewatering goals, sediments will be loaded into sealed rail cars destined for the ECDC landfill in East Carbon, Utah.

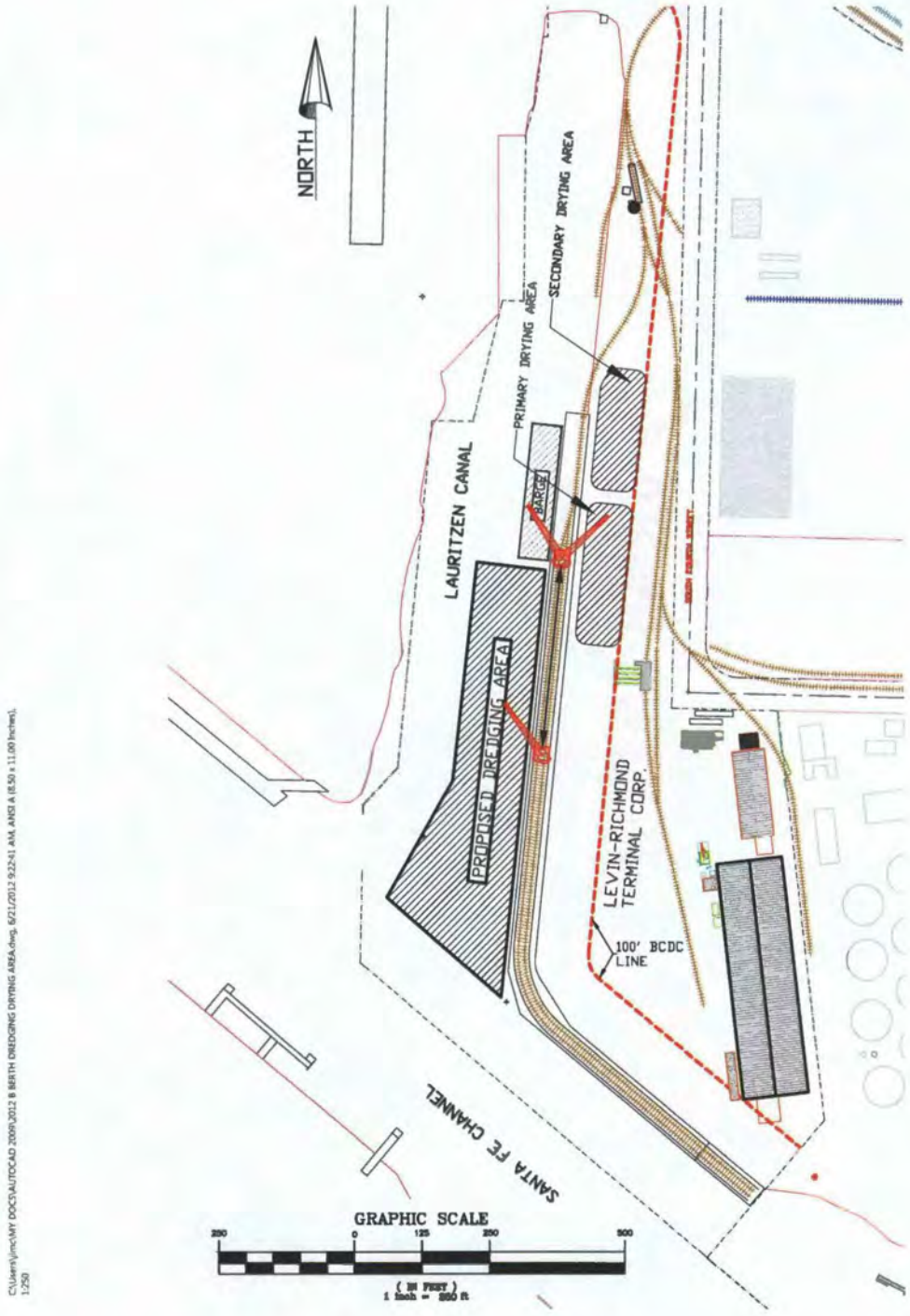

Figure 2-2. Site Plan for Berth B On-Site Sediment Dewatering and Drying Site

2.4 Loading Dewatered Sediments into Rail Cars

2.4.1 Rail Car Preparation and Staging

Upon delivery from the Union Pacific Railroad (UPRR) mainline, rail cars for the project will be staged at the 23rd Street rail yard in Richmond. A switch engine will pick up empty cars from the 23rd Street yard (in car segments of optimum length) and stage them on a nearby spur track (herein, "preparation track") in the LRTC Terminal. In this work area, the bottoms of rail cars will be made leak-resistant using urethane construction foam and/or plastic rail car liners designed to cover any gates.

Once the bottom gates of the first cars are made leak resistant, a switch engine will position them on the loading track in a timely manner so as to minimize standby time.

2.4.2 Loading of Sediments

As the sediments are dried, they will be conveyed by front-end bucket loaders toward the rail car loading area at one end of the paved dewatering cell. At the loading area, front-end bucket loaders (possibly with on-board hydraulic scales) will load the sediments into rail cars staged on the adjacent loading track. As they are loaded, rail cars will be pushed along the track by a switch engine. After being loaded, and prior to pulling out for weighing at the scale house, the rail car exteriors will be cleaned and decontaminated. Any spilled materials will be collected on sheets of visqueen and placed into rail cars for disposal.

After weighing, properly loaded rail cars may be covered, if deemed necessary, with either visqueen liner placed over the load or spray treatment to seal the top material to prevent any material from blowing off. Any plastic cover would be secured with a series of sandbags.

After release from the scale house, the cars will be shunted to a nearby LRTC track to await enough loaded cars (approximately 20) so that they can be transported by the switch engine to the 23rd Street yard where the loaded cars will be assembled for delivery. Upon completion of loading of all the rail cars in a train, or when there are no more materials to load (whichever comes first), the train will be pulled out of the 23rd Street yard by Union Pacific destined for the ECDC landfill in Utah. Rail cars will be periodically inspected to assure their integrity.

2.5 Transportation and Disposal Plan

Dredged materials will be loaded into rail cars at the LRTC Berth B wharf and transported by the UPRR from the LRTC in Richmond, CA to the ECDC Environmental (ECDC) landfill facility in East Carbon, Utah.

At ECDC, the cars will be unloaded utilizing ECDC's rotary rail car dumper. The rotary dumper turns the entire rail car upside down over a lined concrete pit. The contents fall out, the car is

washed clean of any sediment and the materials are then loaded into rock trucks and shuttled into the landfill cell. All of this activity takes place on ECDC property. No public roads are accessed.

2.6 Close-Out Maintenance Dredging Report

At the end of the maintenance dredging project, a report will be drafted and submitted to the USEPA Project Manager. The report will include:

- Summary of dredging and re-handling operations and milestones achieved;
- Final tonnage from the project and number of rail cars shipped;
- Description of on-site decontamination activities;
- Summary of any changes in conditions and how they were addressed;
- Copies of and comparison of pre-dredge and post-dredge surveys;
- Confirmation of project completion;

2.7 Project Schedule

Subject to approval of this SOW by the USEPA, LRTC will prepare and submit a detailed Sampling and Analysis Plan to USEPA and other groups (i.e. Dredged Materials Management Office [DMMO]), as required, to support the performance of ongoing maintenance dredging at LRTC's Berth B. Upon completion of the sampling and testing program, a workplan for the implementation of subsequent dredging, dredged material re-handling, and transportation of contaminated marine sediments to an appropriate disposal site will be prepared and submitted to the USEPA for approval. LRTC would like to commence work on the maintenance dredging as soon as permits can be obtained.